step of retrieving the non-used area regards the setting area adjacent to the setting area where the special detected signal detected last is recorded as the non-used setting area, when none of the special detected signal is detected while the executing device is moved from the retrieval starting position to the predicted position.

According to this aspect, since the setting computer works so as to detect a non-used setting area based on the special detected signal while repeating the transition of the executing device from the retrieval starting position to the predicted position and the update of the retrieval starting position, it is possible to detect the non-used setting area accurately.

In further aspect of the present invention, the recording parameter is intensity of an optical beam for use in the information recording.

According to this aspect, use of a non-used setting area enables the accurate setting of the intensity of the recording optical beam.

In further aspect of the present invention, the instructions are further provided with the step of executing the information recording by use of the set recording parameter.

According to this aspect, use of the accurately-set recording parameter enables the accurate and assured information recording.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram showing a schematic structure of an information recording apparatus according to a preferred embodiment of the present invention;

FIG. 2 is a schematic view showing the detailed structure of a DVD-R according to the embodiment.

FIG. 3 is a flow chart (Ⅰ) showing the recording power setting processing according to the embodiment.

FIG. 4 is a flow chart (Ⅱ) showing the recording power setting processing according to the embodiment.

FIG. 5 is a view showing various waveforms corresponding to the recording power setting processing of the embodiment.

DESCRIPTION OF THE PREFERRED EMBODIMENT

A preferred embodiment of the present invention will be described with reference to the drawings.

An embodiment described below is an embodiment when the present invention is adopted to the setting processing of the recording power performed prior to the actual information recording processing, in an information recording apparatus for recording information in the DVD-R as the above recording medium.

A schematic structure and operation of an information recording apparatus of the embodiment will be described by referring FIG. 1 and FIG. 2.

FIG. 1 is a block diagram showing the schematic structure of the information recording apparatus of the embodiment, and FIG. 2 is a schematic view showing the detailed structure of a DVD-R1.

As illustrated in FIG. 1, an information recording apparatus R of the embodiment is comprised of: a pickup 2 as retrieving device, setting signal recording device, detecting device, performing device, and a mark signal recording device; an RF (Radio Frequency) detecting

section 3; a control section 4 comprised of a CPU and the like as checking device, position retrieving device, first moving device, second moving device, and setting device; a timing creating unit 5; a recording power setting section 6; a recording pattern generating section 7; a recording waveform creating section 8; a driving section 9; a laser driver 10; a pre-format detecting section 11; a condenser 21; a level detecting section 24 including a peak detecting section 22 and a bottom detecting section 23; and a switch 25.

An operation of each component will be described now.

At first, an operation of general information recording processing will be described.

Address information indicating the position of the recorded information on the DVD-R1 and a synchronization signal are previously recorded (in its manufacturing stage) by forming a pre-pit.

At the timing of recording information on the DVD-R1, the pickup 2 irradiates an optical beam B for information recording to the pre-pit just before the actual information recording, detects the address information indicating the record position of the information to be recorded entered from the outside and the synchronization signal for creating a recording clock used as a reference clock in the recording processing, according to, for example, a push-pull method, and creates a push-pull signal Spp including the above two so to supply it to the pre-format detecting section 11.

Then, the pre-format detecting section 11 separates the push-pull signal Spp into the synchronization signal Ssyc and the address information Sadr, and supplies the synchronization signal Ssyc to the